

The Industrial Internet Of Things (IIoTs)



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According to the World Economic Forum “We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before”

INDUSTRIAL REVOLUTIONS



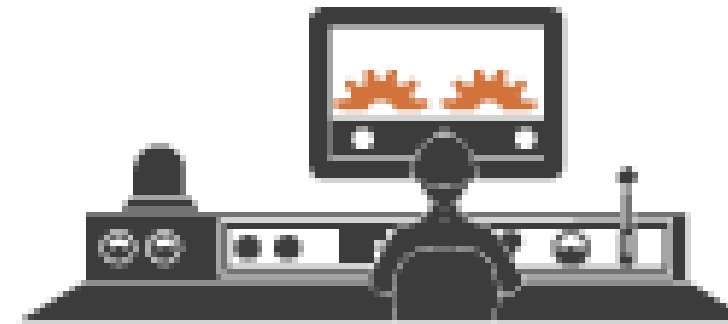
1st
1760s

Steam engine
Mechanization



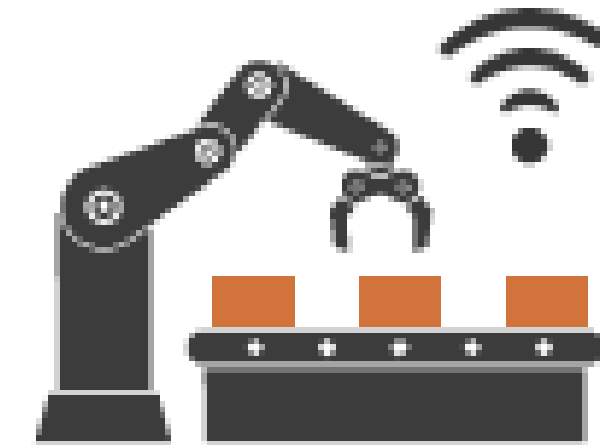
2nd
1870s

Electricity
Mass production



3rd
1960s

Computers
Automation
Internet



4th
NOW

Hyper-connectivity

Revolutions have triggered profound changes in economic systems and social structures.

INDUSTRIAL REVOLUTIONS



diSruptiOn



Momentous Change



Age of Accelerations



Profound & Systemic changes

CHANGE

Technologies Driving

Artificial Intelligence (AI)

Biotechnology

Data Analytics

IoT

Robotics

Quantum computations

Virtual reality

Blockchain

How Does This Impact You?



Vehicle-to-Vehicle (V2V) Communication and Operation

How Does This Impact You?



Automatic Machine Communication and Operation

IoT-based Smart Farming

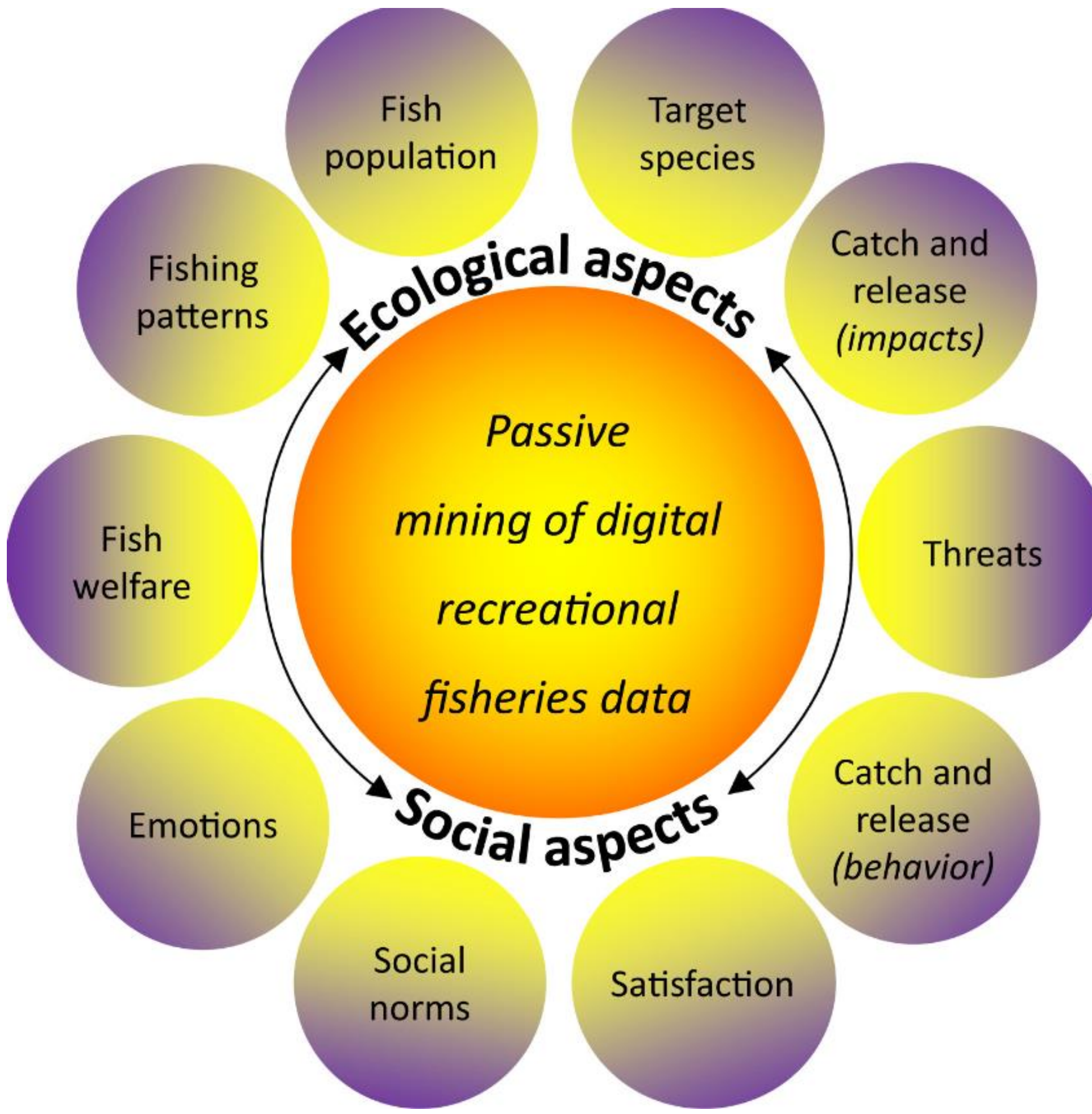
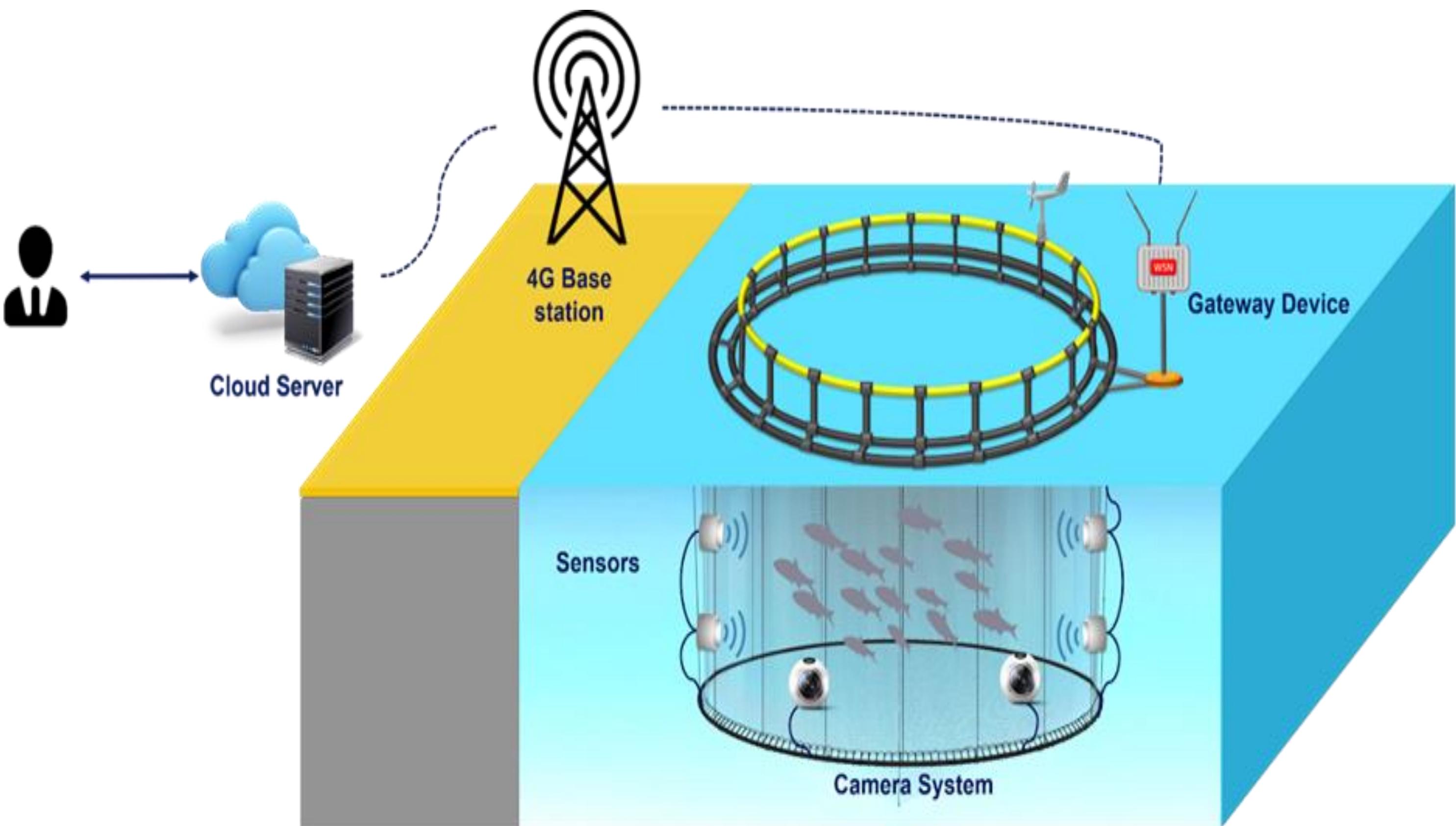
Utilize wireless IoT applications to collect data regarding the location, well-being, and health of their livestock

Monitor pets

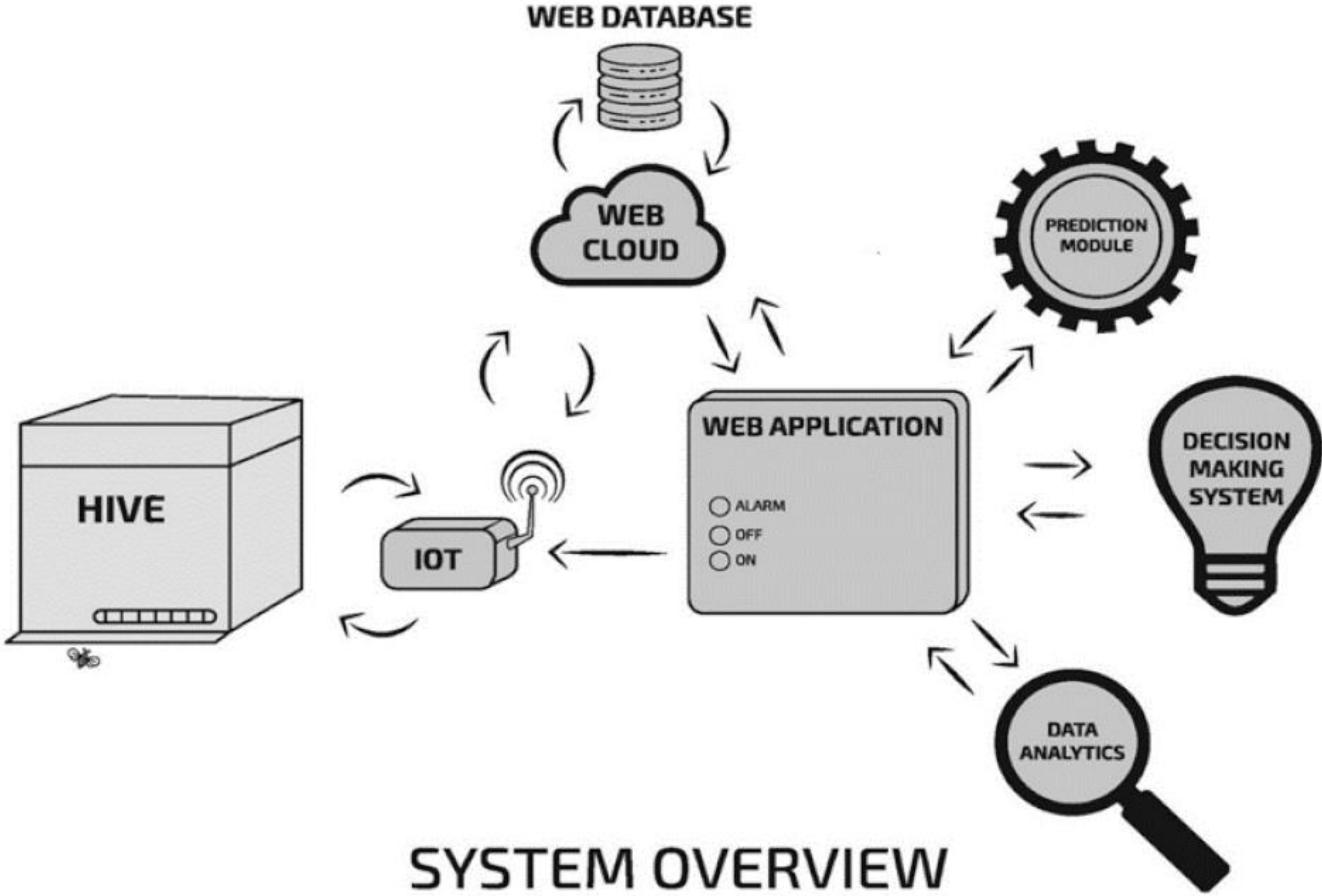
- **Sensor powered by battery is expelled when its water breaks.**
- **This sends information via the Internet to the rancher.**



IoT for Fisheries



IoT for Honeybee Farming



HAPIfork

The HAPIfork is an electronic fork that helps you monitor and track your eating habits. It also alerts you with the help of indicator lights and gentle vibrations when you are eating too fast.



<http://www.hapi.com/products-hapifork.asp>

MyVessyl Cup

**It can hold 13 ounces of liquid.
The battery takes 60 minutes
to fully charge and will last for
5-7 days. Also has wire-free
charging.**



<https://www.myvessyl.com/>

Smart Tooth Brush

The Beam Brush is a connected toothbrush that engages users with their daily hygiene routine.



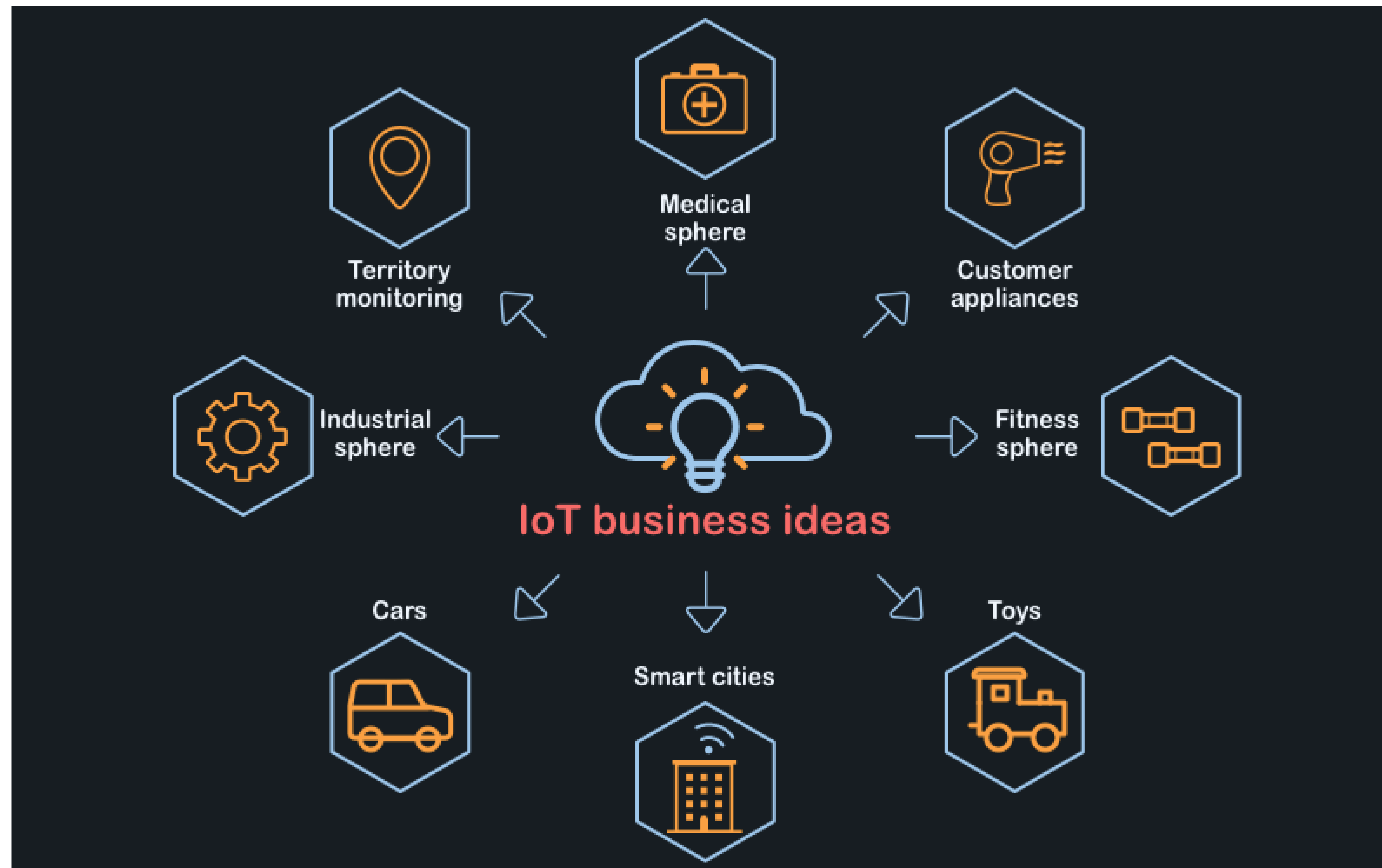
<http://www.beamtoothbrush.com/toothbrush/>

Smart Egg Tray

Egg Minder syncs with your smartphone to tell you how many eggs you've got at home (up to 14 eggs) and when they're going bad.

<http://www.quirky.com/shop/619>

IoT business opportunities



IoT – Advantages

- **Improved Customer Engagement –** Current analytics suffer from blind-spots and significant flaws in accuracy; and as noted, engagement remains passive. IoT completely transforms this to achieve richer and more effective engagement with audiences.



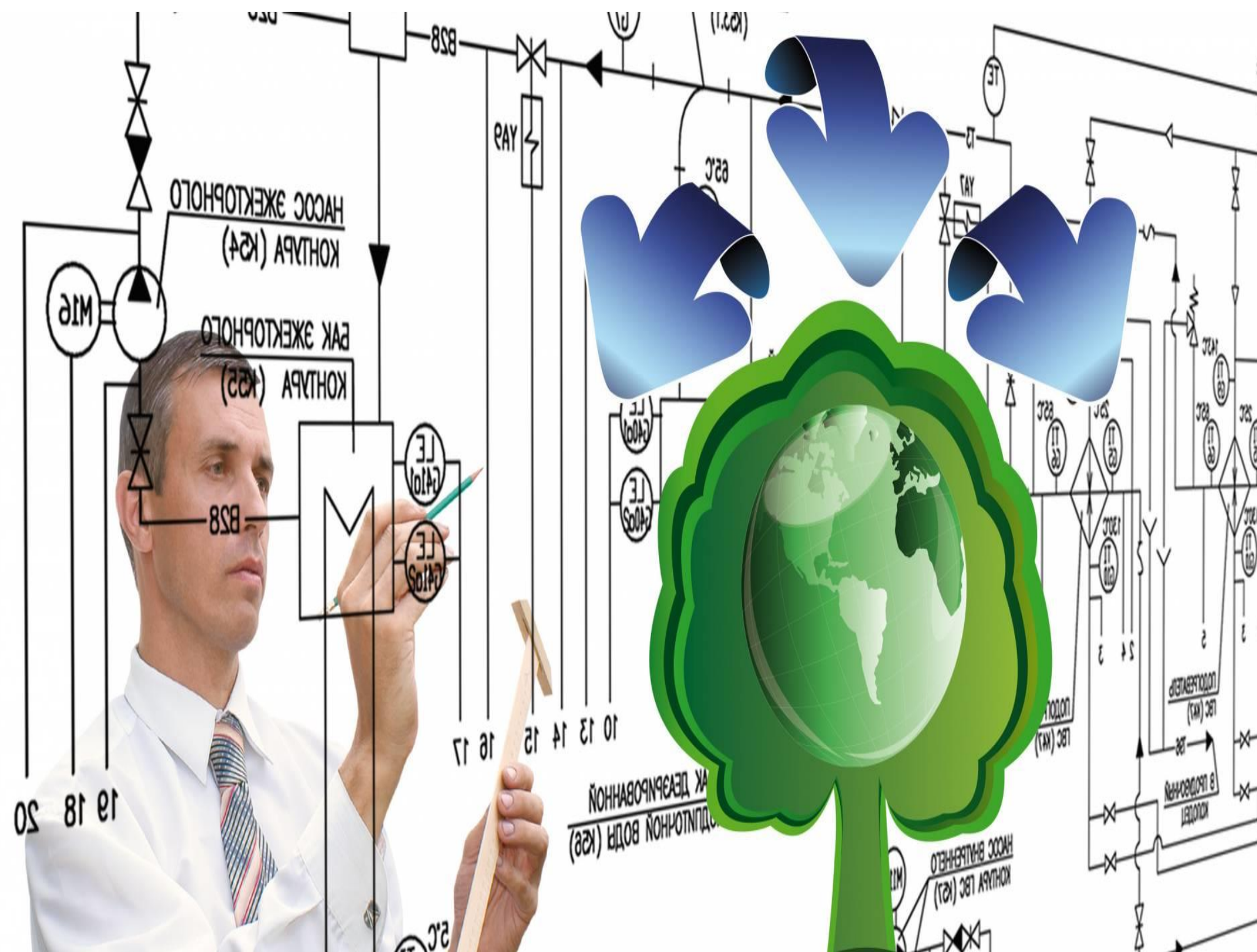
IoT – Advantages



Technology Optimization –

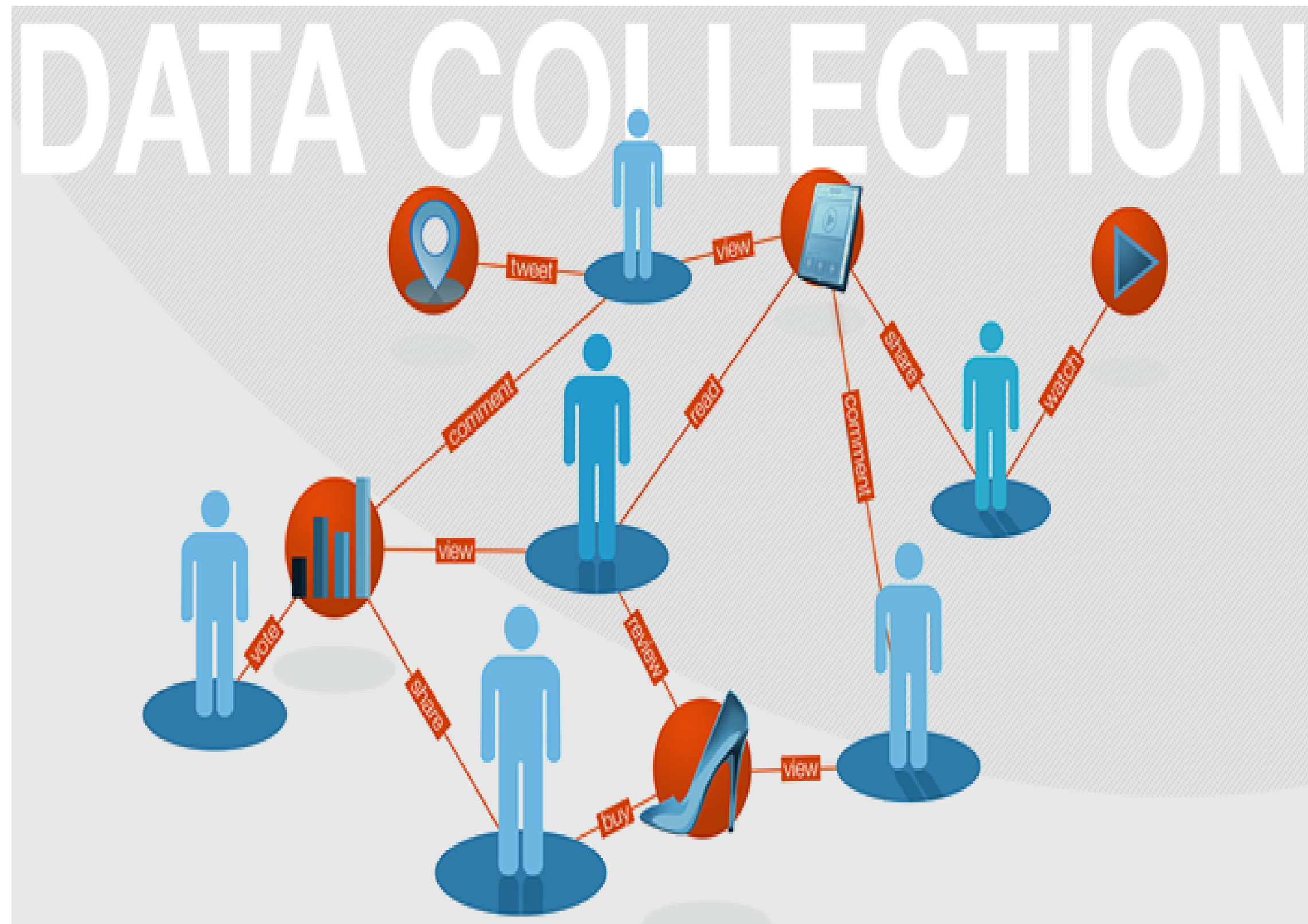
The same technologies and data which improve the customer experience also improve device use, and aid in more potent improvements to technology. IoT unlocks a world of critical functional and field data.

IoT – Advantages



- **Reduced Waste** – IoT makes areas of improvement clear. Current analytics give us superficial insight, but IoT provides real-world information leading to more effective management of resources.

IoT – Advantages



- **Enhanced Data Collection –** Modern data collection suffers from its limitations and its design for passive use. IoT breaks it out of those spaces, and places it exactly where humans really want to go to analyze our world. It allows an accurate picture of everything.

IoT – Disadvantages

- **Security** – IoT creates an ecosystem of constantly connected devices communicating over networks. The system offers little control despite any security measures. This leaves users exposed to various kinds of attackers.



IoT – Disadvantages



- **Privacy** – The sophistication of IoT provides substantial personal data in extreme detail without the user's active participation.

IoT – Disadvantages

- **Complexity** – Some find IoT systems complicated in terms of design, deployment, and maintenance given their use of multiple technologies and a large set of new enabling technologies.



IoT – Disadvantages

- **Compliance** – IoT, like any other technology in the realm of business, must comply with regulations. Its complexity makes the issue of compliance seem incredibly challenging when many consider standard software compliance a battle.



Securing IoT Devices



Authentication – IoT devices connecting to the network create a trust relationship, based on validated identity through mechanisms such as: passwords, tokens, biometrics, RFID, X.509 digital certificate, shared secret, or endpoint MAC address.



Authorization – a trust relationship is established based on authentication and authorisation of a device that determines what information can be accessed and shared.



Network Enforced Policy – controls all elements that route and transport endpoint traffic securely over the network through established security protocols.



Secure Analytics: Visibility and Control – provides reconnaissance, threat detection, and threat mitigation for all elements that aggregate and correlate information.

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